

ABSTRACT

A chemical-mechanical polishing apparatus is provided with a
5 downstream device for conditioning a web-shaped polishing pad. The device
may be used to condition a glazed portion of the pad, and then the
conditioned pad portion may be used again for polishing. The conditioning
device is preferably arranged to apply different conditioning treatments to
10 different portions of the glazed pad. The conditioning device may have roller
segments that rotate at different speeds. Alternatively, the device may have
non-cylindrical rollers that provide different rotational speeds at the pad surface,
or the device may apply different pressures at different portions of the pad. The
15 device may be arranged to provide uniform conditioning across the width of the
pad. The invention is applicable to methods of planarizing semiconductor
wafers. The invention may be used to condition circular pads in addition to
web-shaped pads. The conditioning device may be adjusted or controlled in
20 response to surface characteristics data obtained by measuring polished wafers.

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